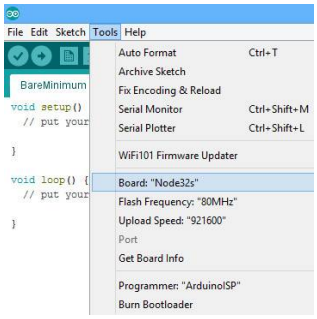
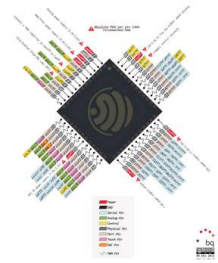
https://www.facebook.com/lamloeicom

Tools > Board: “Node32s”



https://espressif.com/



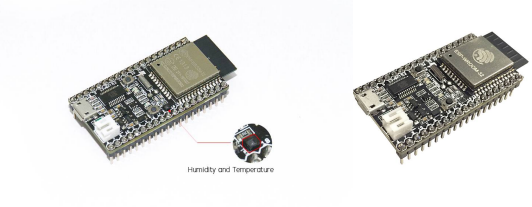
โมดูล ESP-32s

โมดูล ESP-WROOM32

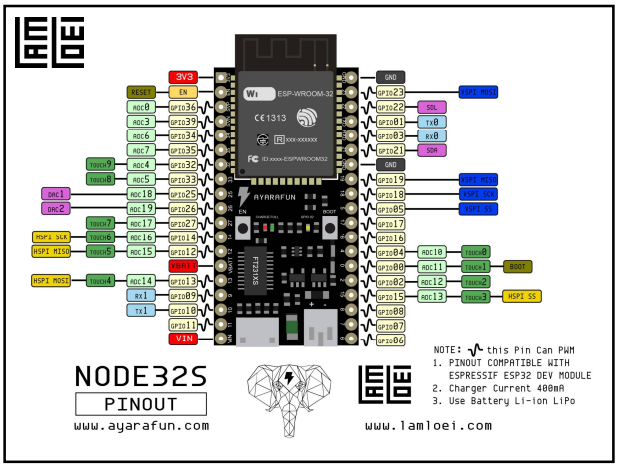
ESP32 FEATURE

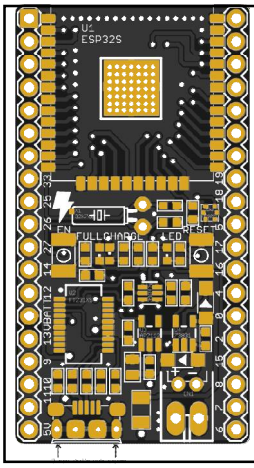
- Xtensa® Dual-Core 32-bit LX6 microprocessors, up to 600 DMIPS clock up to 240 MHz
- 802.11 b/g/n/e/I (2.4 GHz), up to 150 Mbps
- Bluetooth v4.2 BR/EDR and BLE
- RTC timer
- 12-bit SAR ADC up to 18 channels
- 2 × 8-bit D/A converters
- 10 × touch sensors
- QFN48 (6x6 mm)

Node32s Plus vs Node32s



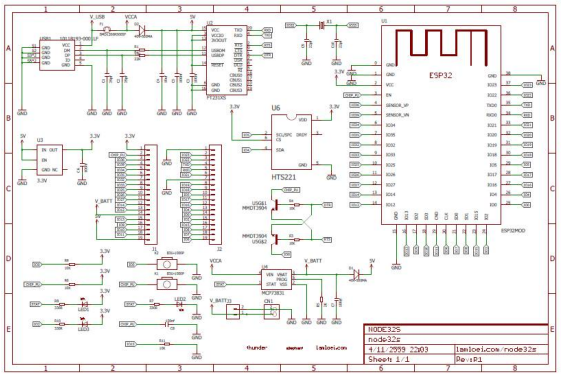
hts221

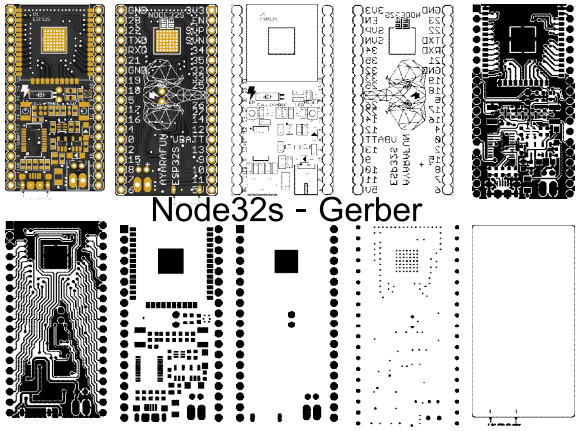


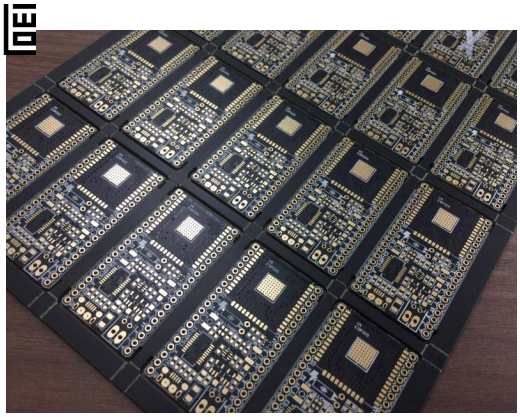


1. รองรับ esp-wroom-32 และ esp-32s
2. กว้างยาว 19 pin * 10 pin
3. JST 2mm 2pin connector
4. PTC Fuse 500mA
5. Micro usb FT231XS
6. Hts221 – temp & humidity
7. Ap2112 – Voltage regulator
8. Mcp73831 – charge battery
9. Mmdt3904 – dual transistor
10. Manual button – EN & io0
11. Crystal 32.768khz 26H

Node32s - Schematic







ESP-NESEMU prototype

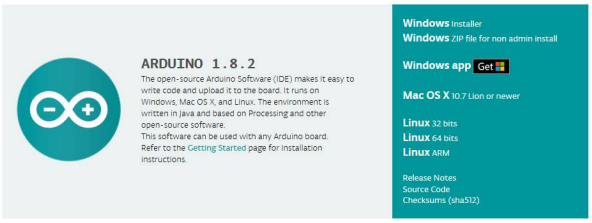
วิธีติดตั้ง

- Install Arduino IDE
- Install Git SCM
- Git GUI, clone, source, target
- get.exe

ดาวน์โหลดไฟล์ที่

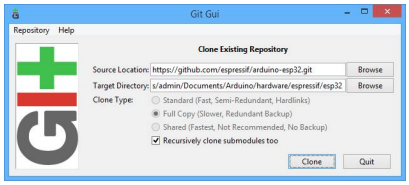
https://www.arduino.cc/en/Main/Software

Download the Arduino IDE



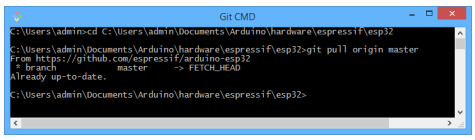
ดาวน์โหลดไฟล์ที่

https://git-scm.com/



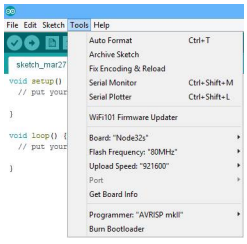
- Git Gui
- Select Clone Existing Repository
- Source: https://github.com/espressif/arduino-esp32.git
- Target: C:/Users/[YOUR_USER_NAME]/Documents/Arduino/hardware/espressif/esp32
- Open C:/Users/[YOUR_USER_NAME]/Documents/Arduino/hardware/espressif/esp32/tools and double-click get.exe

updated

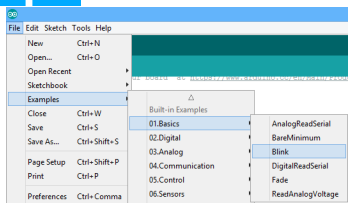


- Git CMD
- cd C:\Users\[YOUR_USER_NAME]\Documents\Arduino\hardware\espressif\esp32
- git pull origin master

Tools > Board: “Node32s”



File > Examples > 01.Basics > Blink

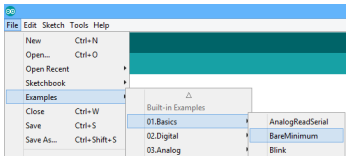


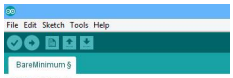
LED_BUILTIN = 2

```
// the setup function runs once when you press reset or power the board
void setup() {
  // initialize digital pin LED_BUILTIN as an output.
  pinMode(LED_BUILTIN, OUTPUT);
}

// the loop function runs over and over again forever
void loop() {
  digitalWrite(LED_BUILTIN, HIGH);   // turn the LED on (HIGH is the voltage level)
  delay(1000);                       // wait for a second
  digitalWrite(LED_BUILTIN, LOW);    // turn the LED off by making the voltage LOW
  delay(1000);                       // wait for a second
}
```

File > Examples > 01.Basics > BareMinimum





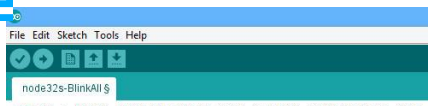
```
void setup() {
  // put your setup code here, to run once:

}

void loop() {
  // put your main code here, to run repeatedly:

}
```

BlinkAll

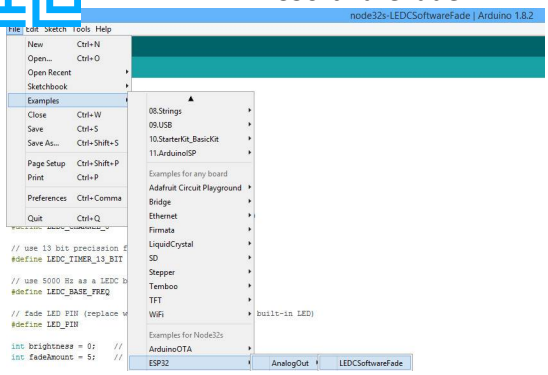


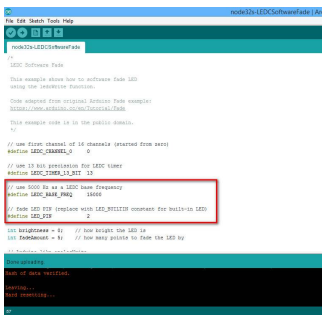
```
int a[] = {23,22,21,19,18,5,17,16,4,0,2,15,13,12,14,27,26,25,33,32};

void setup() {
  for (int i=0; i < (sizeof(a)/sizeof(int)); i++) {
    digitalWrite(a[i], HIGH);
  }
  for (int i=0; i < (sizeof(a)/sizeof(int)); i++) {
    pinMode(a[i], OUTPUT);
  }
}

void loop() {
  for (int i=0; i < (sizeof(a)/sizeof(int)); i++) {
    digitalWrite(a[i], LOW);
    delay(300);
    digitalWrite(a[i], HIGH);
    delay(300);
  }
}
```

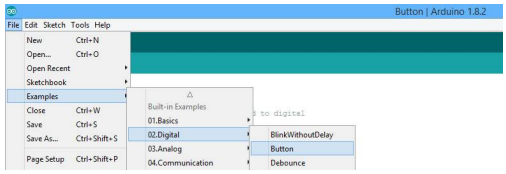
File > Examples > ESP32 > AnalogOut > LEDCSoftwareFade





```
#define LEDC_BASE_FREQ     15000
#define LED_PIN            2
```

File > Examples > 02.Digital> Button



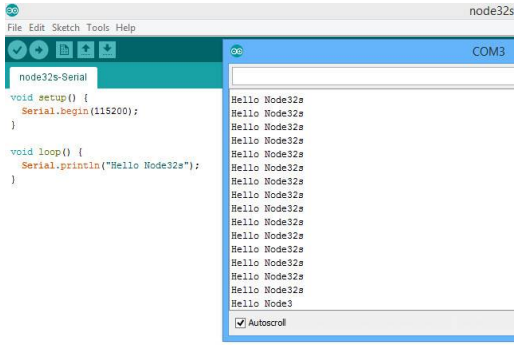
```
const int buttonPin = 0;
const int ledPin =  2;
```

กดปุ่มไฟสว่าง ปล่อยปุ่มไฟดับ

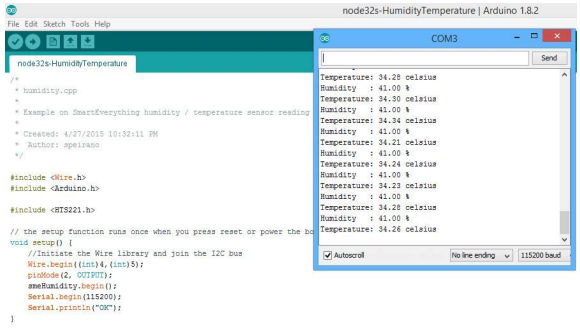
แบบฝึกหัด

1. กดปุ่มไฟสว่าง ปล่อยปุ่มไฟดับ
2. กดปุ่มไฟดับ ปล่อยปุ่มไฟสว่าง
3. กดปุ่มไฟสว่าง ปล่อยปุ่มไฟสว่าง กดปุ่มไฟดับ ปล่อยปุ่มไฟดับ

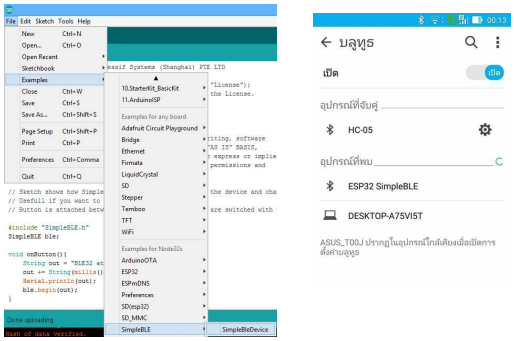
Serial



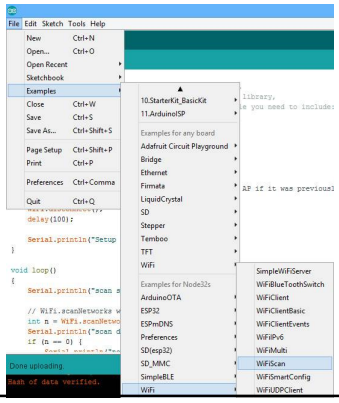
Humi & Temp



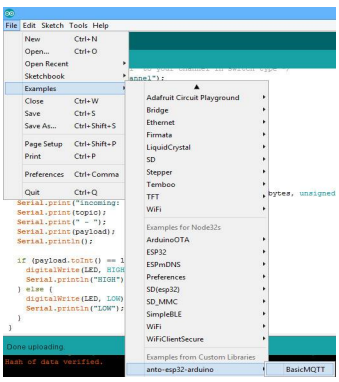
File > Examples > SimpleBLE > SimpleBleDevice



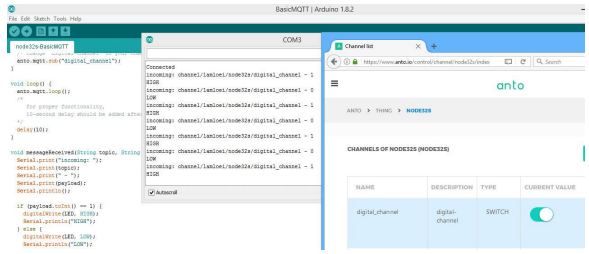
File > Examples > WiFi > WiFiScan



File > Examples > anto-esp32-arduino > BasicMQTT



1. เปิดบราวเซอร์ไปที่ https://www.anto.io
2. สมัครสมาชิกตามขั้นตอน
3. จะได้ userกับ key
4. สร้าง thing ชื่อ node32s
5. สร้าง channel ชื่อ digital_channel
6. จากนั้นแก้ไขแชนแนลเป็น Read Update
7. เปิดโค้ด BasicMQTT
8. ใส่ Ssid และ pass ของ WIFI
9. ใส่ค่าต่างๆ ของ anto
10. * digital_channel ควรเป็นชื่อล่าง
11. Upload Code Basic MQTT
12. ทดสอบการสั่งงานเปิดเปิดไฟผ่านเน็ต



โค้ดและตัวอย่าง

- https://github.com/lamloei
- https://www.facebook.com/lamloeicom